

**What is claimed is:**

1. A heavy chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria spp.*, which comprises an amino acid sequence selected from the group  
5 consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38.

2. A light chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria spp.*, which  
10 comprises an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.

3. A DNA molecule encoding a heavy chain variable region  
15 of an antibody specific to a surface antigen in sporozoite of *Eimeria spp.*, wherein the heavy chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38.

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4. The DNA molecule according to claim 3, wherein the DNA comprises a nucleotide sequence selected from the group consisting of SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23 and SEQ ID NO:37.

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5. A DNA molecule encoding a light chain variable region of an antibody specific to a surface antigen in sporozoite

of *Eimeria* spp., wherein the light chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.

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6. The DNA molecule according to claim 5, wherein the DNA comprises a nucleotide sequence selected from the group consisting of SEQ ID NO:25, SEQ ID NO:27, SEQ ID NO:29, SEQ ID NO:31 and SEQ ID NO:39.

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7. A recombinant scFv antibody specific to a surface antigen in sporozoite of *Eimeria* spp., which comprises:

(a) a heavy chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., comprising an amino acid sequence selected from the group consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38; and

(b) a light chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., comprising an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.

8. The recombinant scFv antibody according to claim 7, wherein the heavy chain variable region comprises the amino acid sequence of SEQ ID NO:18 and the light chain variable region comprises the amino acid sequence of SEQ

ID NO:26.

9. The recombinant scFv antibody according to claim 7,  
wherein the heavy chain variable region comprises the  
5 amino acid sequence of SEQ ID NO:20 and the light chain  
variable region comprises the amino acid sequence of SEQ  
ID NO:28.

10. The recombinant scFv antibody according to claim 7,  
10 wherein the heavy chain variable region comprises the  
amino acid sequence of SEQ ID NO:22 and the light chain  
variable region comprises the amino acid sequence of SEQ  
ID NO:30.

11. The recombinant scFv antibody according to claim 7,  
15 wherein the heavy chain variable region comprises the  
amino acid sequence of SEQ ID NO:24 and the light chain  
variable region comprises the amino acid sequence of SEQ  
ID NO:32.

20 12. The recombinant scFv antibody according to claim 7,  
wherein the heavy chain variable region comprises the  
amino acid sequence of SEQ ID NO:38 and the light chain  
variable region comprises the amino acid sequence of SEQ  
25 ID NO:40.

13. The recombinant scFv antibody according to claim 7,

wherein the scFv antibody further comprises a linker between the heavy chain variable region and the light chain variable region.

5 14. A DNA molecule encoding scFv antibody specific to a surface antigen in sporozoite of *Eimeria* spp., which comprises:

10 (a) a DNA molecule encoding a heavy chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., wherein the heavy chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24 and SEQ ID NO:38; and

15 (b) a DNA molecule encoding a light chain variable region of an antibody specific to a surface antigen in sporozoite of *Eimeria* spp., wherein the light chain variable region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:26, SEQ ID NO:28, SEQ ID NO:30, SEQ ID NO:32 and SEQ ID NO:40.

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15. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:18 and the DNA molecule  
25 encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:26.

16. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:20 and the DNA molecule  
5 encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:28.

17. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain  
10 variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:22 and the DNA molecule encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:30.

18. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:24 and the DNA molecule  
15 encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:32.  
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19. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding a heavy chain variable region comprises DNA molecule encoding the amino  
25 acid sequence of SEQ ID NO:38 and the DNA molecule encoding a light chain variable region comprises DNA molecule encoding the amino acid sequence of SEQ ID NO:40.

20. The DNA molecule encoding scFv antibody according to claim 14, wherein the DNA molecule encoding scFv antibody further comprises a DNA molecule encoding linker between  
5 the DNA molecule encoding the heavy chain variable region and the DNA molecule encoding the light chain variable region.

21. The DNA molecule encoding scFv antibody according to  
10 any one of claims 14-20, wherein the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:18 comprises DNA molecule of SEQ ID NO:17, the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:20  
15 comprises DNA molecule of SEQ ID NO:19, the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:22 comprises DNA molecule of SEQ ID NO:21, the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ  
20 ID NO:24 comprises DNA molecule of SEQ ID NO:23, and the DNA molecule encoding the heavy chain variable region comprising the amino acid sequence of SEQ ID NO:38 comprises DNA molecule of SEQ ID NO:37.

25 22. The DNA molecule encoding scFv antibody according to any one of claims 14-20, wherein the DNA molecule encoding the light chain variable region comprising the amino acid

sequence of SEQ ID NO:26 comprises DNA molecule of SEQ ID  
NO:25, the DNA molecule encoding the light chain variable  
region comprising the amino acid sequence of SEQ ID NO:28  
comprises DNA molecule of SEQ ID NO:27, the DNA molecule  
5 encoding the light chain variable region comprising the  
amino acid sequence of SEQ ID NO:30 comprises DNA molecule  
of SEQ ID NO:29, the DNA molecule encoding the light chain  
variable region comprising the amino acid sequence of SEQ  
ID NO:32 comprises DNA molecule of SEQ ID NO:31, the DNA  
10 molecule encoding the light chain variable region  
comprising the amino acid sequence of SEQ ID NO:40  
comprises DNA molecule of SEQ ID NO:39.